NOAA Teacher at Sea Program

Laura Guertin, Aboard NOAA Ship *Thomas Jefferson*
September 2 – September 19, 2014

Activity Title: Lunch on the NOAA Ship *Thomas Jefferson*

Subject (Focus/Topic): Careers with the NOAA Corps and on hydrographic survey vessels

Grade Level: This assignment was designed for college students in an introductory-level oceanography course for non-science majors, but the exercise can be easily used at the high school level and scaled down to middle school grades.

Average Learning Time: This is a homework assignment. I recommend taking 5-10 minutes to review the assignment with students when it is handed out. Students can complete the assignment in two-to-three weeks.

Lesson Summary (Overview/Purpose): Students learn about NOAA careers at sea from available online resources and reflect upon additional information they would like to learn if they could ask questions directly of the ship's crew.

Overall Concept (Big Idea/Essential Question): What educational background is necessary to work on a NOAA ship? What are the job duties/descriptions and how do they differ for the NOAA Corps and wage mariners? What else would you (students) like to know about NOAA careers at sea?

Specific Concepts (Key Concepts): Students will learn what majors and educational background is necessary to be a NOAA Corps officer and a wage mariner. Students will learn about careers at sea (specifically with the NOAA fleet).

Focus Questions (Specific Questions): (listed above)

Objectives/Learning Goals: (a) Students will be able to successfully navigate the provided resources to write an overview summary of the job description and educational preparation necessary of NOAA Corps officers and wage mariners in NOAA's hydrographic survey fleet; (b) Students will be challenged to think beyond the information provided online about careers on NOAA's vessels and provide two questions that they would ask crew members to learn more about maritime careers.

Background Information: Students should have some introductory background about NOAA and the NOAA fleet. As this exercise focuses on NOAA's hydrographic survey fleet, it is helpful to show students nautical charts. I have students do a prior exercise with nautical charts to then have students explore, "Where did the data on these charts come from? Who collects this data, and how?"

Common Misconceptions/Preconception: I have not discovered any misconceptions or preconceptions, as students have never thought about marine careers or hydrographic surveying before taking my course. I would recommend stressing to the students that for this assignment, lunch on the ship is a hypothetical scenario, that they are not getting the real opportunity to go aboard the ship.

Materials: The handout given to students is at the end of this lesson description, along with links to the websites students are referred to for exploration.

Technical Requirements: No technical resources are needed during class time. Students will need internet access outside of class to review the online videos and blog posts. Students will need access to MS Word or Google Docs to type up and submit the assignment.

Teacher Preparation: For teachers that have been out to sea, they are encouraged to adjust this assignment to their own cruise (for example, if they participated in a fisheries cruise) and refer students to their own blog posts. Otherwise, the teacher should review the videos ahead of time to make sure they are prepared for any student questions that may come from viewing the videos.

Keywords: wage mariner, NOAA Corps, hydrography, steward

Pre-assessment Strategy/Anticipatory Set (Optional): Some of the secondary goals of my courses include having students learn about the process of science and learn that scientists/researchers are humans in careers that are accessible to them and possibilities for their own futures. I remind students of these course goals when assigning this homework assignment.

Lesson Procedure: This is a take-home assignment for students. I review the entire assignment with students to make sure they are clear on the instructions and take them through the different sections of the NOAA Civilian Employment Opportunities website (if technology is available in the classroom). I answer any questions students have on the instructions and ensure that they understand what I mean by coming up with "good quality questions" to ask during the "lunch." Students type up the assignment in a MS Word document or Google Doc and submit online to my online course management system. Three weeks is a suggested time to provide students outside of class to complete the assignment.

Assessment and Evaluation: (provided in the assignment description at the end of this document)

Standards:

National Science Education Standard(s) Addressed:

Science as Inquiry (An appreciation of "how we know" what we know in science)
History and Nature of Science (Science as a human endeavor)

Ocean Literacy Principles Addressed:

#1 – The Earth has one big ocean with many features
#6 - The oceans and humans are inextricably interconnected
#7 - The ocean is largely unexplored

Pennsylvania State Science Standards Addressed:

CC.3.6: Writing: Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content
13.1.11: Career Education and Work, Career Awareness and Preparation

Additional Resources: All suggested resources are contained in assignment handout included with this document.

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Lunch on the NOAA Ship *Thomas Jefferson*

Let's pretend we are about to have lunch with crew members on one of NOAA's hydrographic survey vessels!

Congratulations! You have just won the most incredible contest! You get to board the NOAA Ship *Thomas Jefferson* the next time it is in port at the Marine Operations Center, Atlantic (MOC-A) in Norfolk, Virginia, and have lunch with members of the ship's crew. Before you head to the ship, you will want to prepare for whom you are about to meet. Start by learning some background on the NOAA Commissioned Officers and wage marine civilians that operate and maintain this ship and all of NOAA's research vessels in the hydrographic survey fleet.

The NOAA Corps (*note that on the *Thomas Jefferson,* the Commanding Officer (CO) also serves as the Chief Scientist)

- NOAA Corps website: http://www.noaacorps.noaa.gov/index.html
- NOAA Corps recruitment video (21 min, YouTube): http://youtu.be/WdloPGQgiuY

This video is an overview of the **Wage Mariners** that make up NOAA's fleet (17 min, YouTube, http://youtu.be/LqJzLQ3K-1Q) and includes descriptions of the following:

- Deck Crew
- Engineering Staff
- Steward Department
- Hydrographic Survey Technicians, part of the Department Personnel

Other helpful resources to review ahead of your lunch include:

- The NOAA Civilian Employment Opportunities website, which lists job openings and descriptions: http://www.moc.noaa.gov/shipjobs/index.html
- NOAA National Ocean Service, Hydrographic Surveying: http://oceanservice.noaa.gov/navigation/hydro/
- The NOAA Ship *Thomas Jefferson* website: http://www.moc.noaa.gov/tj/index.html
- The blog posts from Dr. G's time at sea! http://teacheratsea.noaa.gov/2014/guertin.html
- NOAA has a book written for a middle school audience, but there is very useful information contained in *Teacher at Sea: Mrs. Armwood's Hydrographic Adventure on the NOAA Ship FAIRWEATHER* (http://teacheratsea.noaa.gov/books/pdf/tas_book3.pdf)

Now, before you go to lunch, you must prepare a short description of the job duties of the ship's crew, so you don't sound silly while slurping your soup. The information you collect for the NOAA Corps and wage mariners should include:

- What are some of the day-to-day responsibilities of the NOAA Corps officers and the wage mariners?
- What degree fields and/or level of education is required for these positions?

You should also go to lunch prepared with questions to ask! You need to come up with two questions to ask each person (the CO and a member of each of the deck crew, engineering staff, steward department, and hydrographic survey team) at the lunch table on whatever subject you would like to learn more about! Please ask questions beyond the simple, "when did you start working on a ship," and "what do you like best about your job." In addition, be prepared to describe WHY you would ask these questions – think about what makes your questions good and thoughtful questions to maximize your knowledge in the short time you have with each person. Right before the lunch ends, you will have the opportunity to ask one final question to the CO and all of the crew, and explain why this would be your parting question.

IN SUMMARY:

- Write up a brief description of the job responsibilities of NOAA Corp members and wage mariners on a NOAA hydrographic survey vessel (one short paragraph for each, a total of two paragraphs)
- Come up with two career-related questions you would ask each person (the CO, deck crew, engineering staff, steward department, hydrographic survey team (total of ten questions)
    - Describe why you would ask each set of questions to each person/position
    - Each question should be different for each person – do not repeat your questions for any of the crew members
- Come up with one final question to ask all of the crew members (this can be the same question for each, and make it a good one!), and why you would ask this question

Grading outline for Lunch on the NOAA Ship *Thomas Jefferson* assignment

Everyone will start out with a score of "3" in each category. From there I will determine if the response is not up to college-level expectations or lacking information and a complete thought (can be lowered down to a 1 or 0), or if you greatly exceed expectations and did a really thorough job that "knocked my socks off" (up to a 5).

Summary of job responsibilities of NOAA Corps	0 1 2 3 4 5
Summary of job responsibilities of wage mariners	0 1 2 3 4 5
The *Thomas Jefferson's* Commanding Officer (CO)	
Question #1 AND WHY	0 1 2 3 4 5
Question #2 AND WHY	0 1 2 3 4 5
Deck crew member	
Question #1 AND WHY	0 1 2 3 4 5
Question #2 AND WHY	0 1 2 3 4 5
Engineering staff member	
Question #1 AND WHY	0 1 2 3 4 5
Question #2 AND WHY	0 1 2 3 4 5
Steward department member	
Question #1 AND WHY	0 1 2 3 4 5
Question #2 AND WHY	0 1 2 3 4 5
Hydrographic survey team member	
Question #1 AND WHY	0 1 2 3 4 5

Question #2 AND WHY	0 1 2 3 4 5
One final question to all of the crew, AND WHY	0 1 2 3 4 5

TOTAL project grade is based out of 65 points